

Management of Vitamin D Deficiency and Insufficiency in Adults

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This guideline is intended for use in primary care

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Treatment options

Serum 25-OHD concentrations	Recommended treatment and duration for colecalciferol (vitamin D ₃) the following is a guide, other treatment regimens may be used	Rx Source
<p>Vitamin D deficiency < 25 nmol/L</p>	<p>Total loading dose approx. 300,000 IU (units) vitamin D₃ orally in divided doses over 6 weeks:</p> <p>1st line: Invita D3 50,000 IU caps: ONE capsule ONCE A WEEK for 6 weeks (£9.90 treatment cost)</p> <p>2nd line: Invita D3 drops SF (50,000 IU/ml): 1ml ONCE A WEEK for 6 weeks (£12.50 treatment cost) Suitable for vegetarians</p> <p>OR: Stexerol D3 25,000 IU tabs: TWO tablets ONCE A WEEK for 6 weeks (£17 total treatment cost) Suitable for vegetarians</p> <p>3rd line: Pro D3 Vegan capsules (20,000 IU): THREE capsules ONCE A WEEK for 6 weeks (£21 treatment cost) Suitable for vegans</p> <p>Maintenance: 800 - 2,000 IU daily, occasionally up to 4,000 IU daily:</p> <p>Supplements of 400 - 1000 units (10 -25 micrograms) vitamin D can be bought from pharmacies/ supermarkets</p>	<p>GP or hospital</p> <p>OTC</p>
<p>Vitamin D insufficiency 25 – 50 nmol/L</p>	<p>For the treatment of vitamin D insufficiency, maintenance doses (800 - 2,000 IU daily) should be started without the use of loading doses in the patient groups considered “at risk” of vitamin d deficiency (see overleaf for list) as well as those with:</p> <ul style="list-style-type: none"> • fragility fracture, documented osteoporosis or high fracture risk • raised PTH <p>Higher doses of up to 2000 IU a day, occasionally up to 4000 IU a day, may be used for certain groups of people, for example those with malabsorption disorders</p> <p>Consider loading dose (as above regimes) in those with:</p> <ul style="list-style-type: none"> • treatment with antiresorptive medication for bone disease (zoledronate or denosumab or teriparatide) • symptoms suggestive of vitamin D deficiency 	<p>OTC</p> <p>GP or hospital</p>
<p>Vitamin D replete >50 nmol/L</p>	<p>Follow advice overleaf for non-pharmacological self-care (sunlight and diet)</p>	

Note: supplementary calcium should only be prescribed if [dietary calcium is insufficient](#) or osteomalacia is suspected

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Who to test (£11 per test!)	Do <u>not</u> test
<ul style="list-style-type: none"> ✓ Patients who have conditions with outcomes that may be improved with vitamin D treatment e.g. confirmed osteomalacia, osteoporosis, and melanoma ✓ Patients with musculoskeletal symptoms that could be attributed to vitamin D deficiency e.g. chronic widespread pain with other features of osteomalacia (e.g. proximal muscle weakness) ✓ Prior to starting on a potent antiresorptive agent (zoledronate or denosumab or teriparatide) 	<ul style="list-style-type: none"> ✗ Asymptomatic individuals at higher risk of vitamin D deficiency - listed overleaf: Dept. of Health and Social Care Guidance list of groups at higher risk of vitamin D deficiency ✗ Universal population screening of asymptomatic healthy individuals

Monitoring and follow-up

Routine repeat vitamin D testing is generally unnecessary but may be appropriate in patients with symptomatic deficiency or malabsorption. Check serum adjusted calcium one month after treating with loading doses of vitamin D - repletion may unmask primary hyperparathyroidism. In patients with high serum calcium and normal/ high parathyroid hormone, discuss with an endocrinologist before initiating treatment.

At risk groups of vitamin D deficiency

In the following groups, do not test for vitamin D deficiency routinely (only if symptomatic). If asymptomatic, advise a daily supplement containing 10 micrograms (400 IU) of vitamin D, which can be bought from pharmacies, health food shops or supermarkets.

[Dept. of Health and Social Care Guidance](#) states that the following groups of people are at higher risk of vitamin D deficiency:

- All pregnant /breastfeeding women, especially teenagers and young women (check [SPC](#) for safety advice of preparations containing vitamin D during pregnancy and breastfeeding)
- Infants and young children under 5 years of age
- Older people aged 65 years or over
- People who have low or no exposure to the sun, e.g. those who cover their skin for cultural reasons, or who are housebound
- People who have darker skin (African, African-Caribbean and South Asian origin) as they are less able to make as much vitamin D

Furthermore,

- Some drug treatments can lower vitamin D levels such as: some anticonvulsants, corticosteroids, rifampicin and antiretrovirals
- Some malabsorption disorders such as Crohn's disease or chronic kidney disorder may increase risk of vitamin D deficiency
- Everyone is advised to take a supplement of vitamin D during winter months [Statement from PHE and NICE](#) Dec 2020

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Non-pharmacological self-care methods

Unless contraindicated, regular but sensible exposure to sunlight (20-30 minutes) around midday on the face and forearms 2-3 times a week during the months of April – October. Longer exposure may be required in people with darker skin.

Dietary sources of vitamin D: oily fish/ fish oils advised 2-3 portions a week. Also egg yolk and some breakfast cereals contain vitamin D.

References and useful reading

- [The National Osteoporosis Society - Vitamin D and Bone Health: A Practical Clinical Guideline for Patient Management \(Dec 2018\)](#)
- Department of Health and Social Care Guidance: [Vitamin D - advice on supplements for at risk groups](#)
- BNF Colecalciferol <https://bnf.nice.org.uk/drug/colecalciferol.html>
- Drug costs correct as per [April 2021 drug tariff](#)
- NICE: [Vitamin D deficiency in adults - treatment and prevention \(September 2018\)](#)
- Public Health England [Statement from PHE and NICE on vitamin D supplementation during winter - GOV.UK \(Nov 2020\)](#)
- Nice Guidance NG 14 Melanoma: assessment and management <https://www.nice.org.uk/guidance/ng14>
- Specialist Pharmacy Service Q&A: Which oral vitamin D products are suitable for people with vegetarian or vegan diets? <https://www.sps.nhs.uk/articles/which-vitamin-d-preparations-are-suitable-for-a-vegetarian-or-vegan-diet/>